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(71) Applicant
The Mead Corporation (USA-Ohio),
Courthouse Plaza Northeast, Dayton, Ohio 45463, United States of America

(72) Inventor
E. Negelen

(74) Agent and/or Address for Service
J. M. Hepworth & Co.,
36 Regent Place, Rugby, Warwickshire CV21 2PN

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GB A 2100217
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GB 1487220
GB 1286211
US 4139094

(58) Field of search
B8C

(54) **Container carrier**

(57) A package accommodating a plurality of containers comprises a bottom wall (18) having apertures (46, 48) in which the containers are received so that lower wall portions of the containers are disposed below the bottom wall, side walls (16, 20) flanking upper wall portions of the containers and a top wall (14) overlying the tops of the containers. The bottom wall includes a hinged flap (50, 58) projecting into each bottom wall aperture adjacent opposite ends of the bottom wall. The flaps are pivotally downwardly displaced by the containers so that marginal portions (m) of the bottom wall are twisted out of the plane the remainder of the bottom wall.

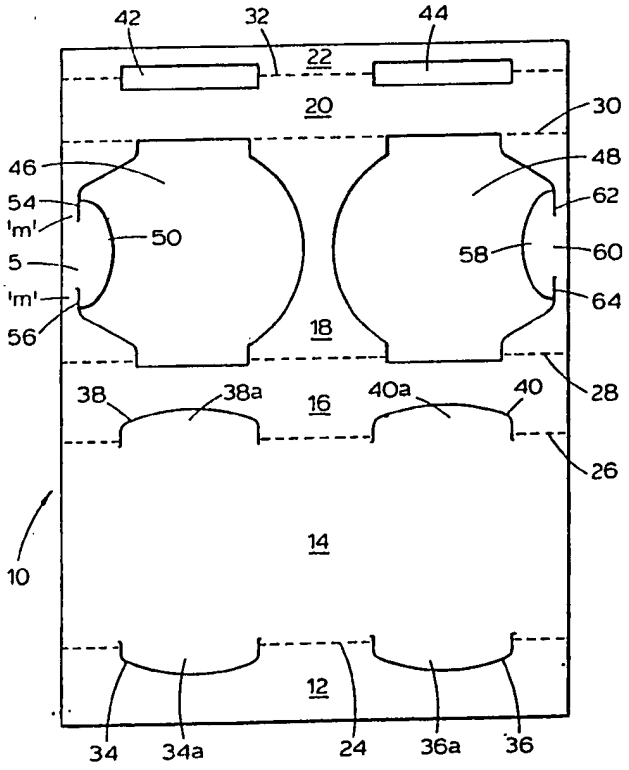

Fig.1

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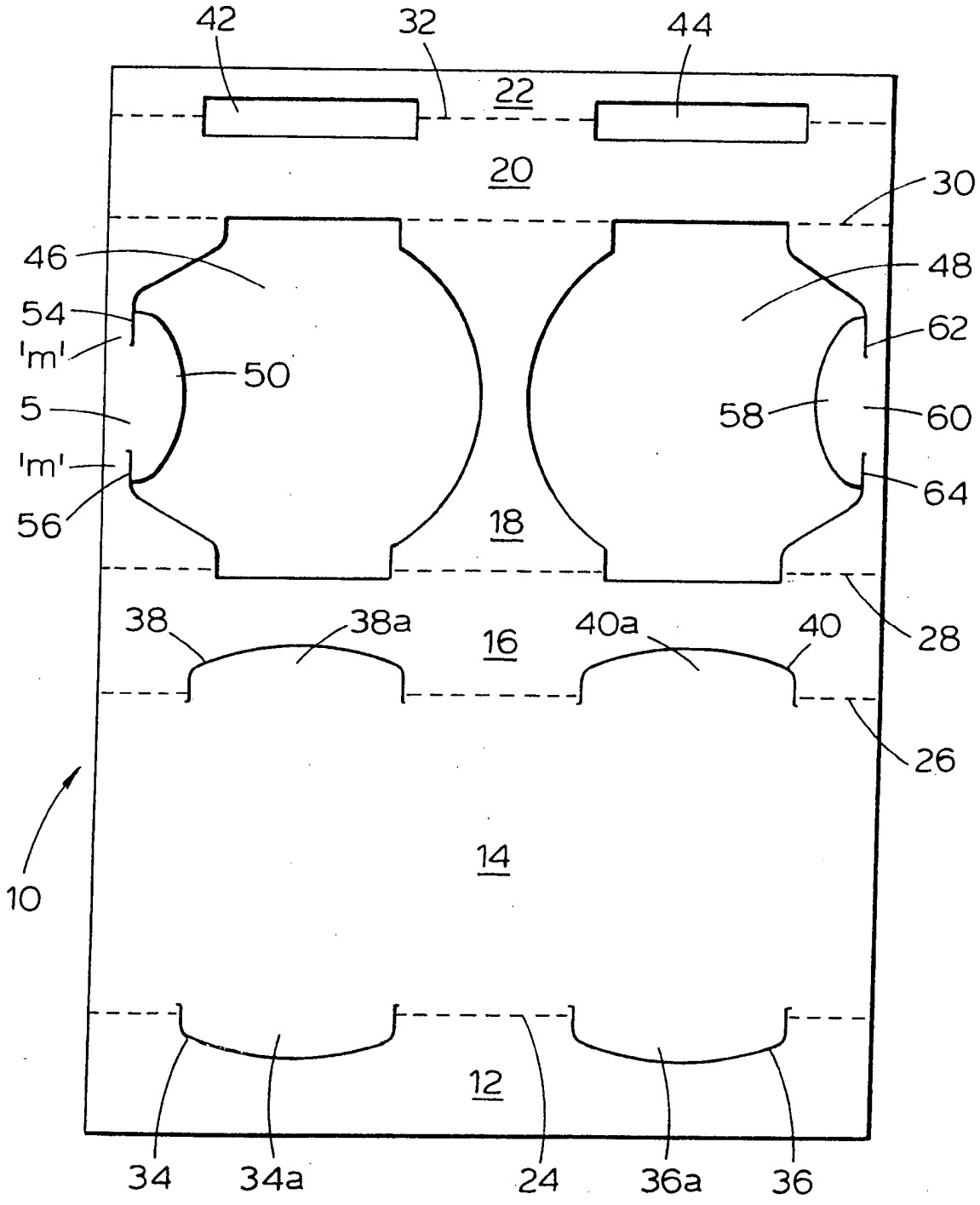
42
32
44
22
20
30
46
48
54
'm'
50
62
5
58
60
'm'
56
64
18
38
38a
16
40a
40
28
26
14
10
12
34
34a
24
36a
36

Fig.1

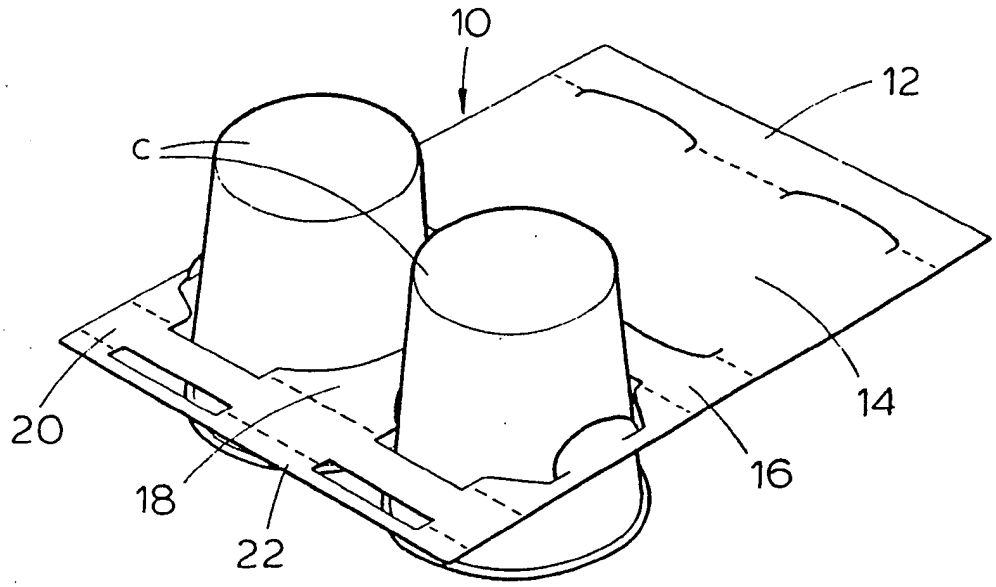

Fig. 2

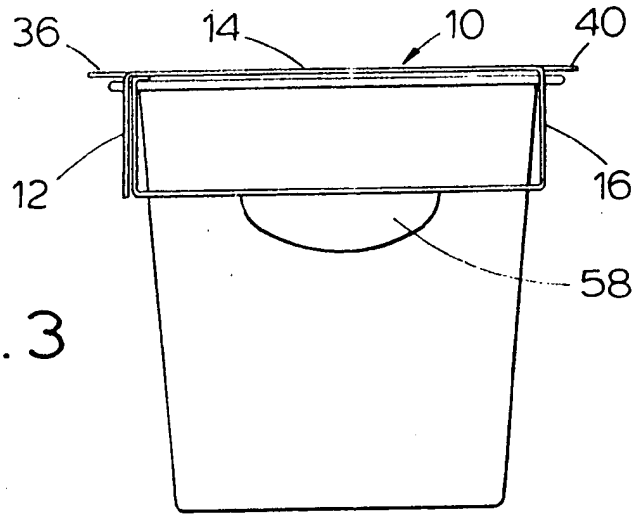

Fig. 3

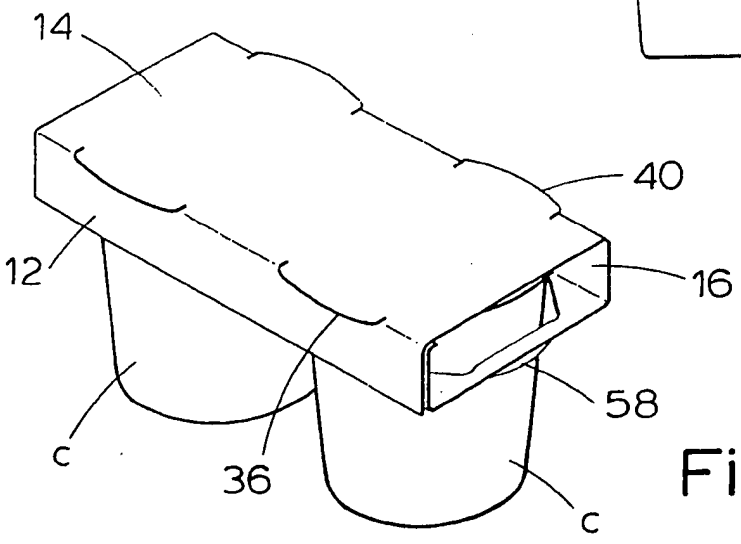

Fig. 3a

SPECIFICATION

Multi-unit package

This invention relates to a package accommodating a plurality of primary containers namely frusto-conical containers such as those containing foodstuffs which are sealed by a tearable lid, and particularly such containers having flanged tops.

In known containers of this general type, hinged flaps are not provided and the marginal parts of the bottom wall of the package are easily torn during insertion of the containers into the package because a close fit between package and container is desirable.

The hinged flaps allow a temporary enlargement of the apertures into which the containers are inserted because they are dislodged by the containers and hinged so as to twist out of the plane of the bottom wall. After the containers have been fully introduced into their respective apertures the hinged flaps are biased into engagement with the container walls so as to enhance the close fit. Thus, tearing is avoided without the necessity of increasing the dimensions of those parts of the package vulnerable to tearing.

One aspect of the invention provides a package accommodating a plurality of containers which package comprises a bottom wall having apertures in which containers are received so that lower wall portions of the containers are disposed below the bottom wall, side walls flanking upper wall portions of the containers and a top wall overlying the tops of the containers, characterised in that said bottom wall includes a hinged flap initially projecting into each space defined by a bottom wall aperture adjacent each of the opposite ends of said bottom wall, which flaps are pivotally displaced by the containers so that marginal portions of the bottom wall are twisted out of the plane thereof, whereby the flaps engage wall portions of the containers.

Another aspect of the invention provides a blank for forming a package which blank comprises, in series, a top panel, a first side wall panel, a bottom wall panel, and a second side wall panel hinged one to the next forming a generally tubular structure, said bottom panel including a plurality of apertures to receive containers to be packaged, characterised in that a hinged flap projects into the space defined by each bottom wall aperture adjacent opposite ends of the bottom wall panel adjacent said ends so that pivotal movement of the flaps causes twisting movement of said marginal portions.

An embodiment of the invention will now be described, by way of example, with reference to the accompanying drawings, in which:l

Figure 1 is a plan view of a blank from which a package according to the invention is formed;

Figure 2 is a perspective view of the package in partially formed condition, and

Figures 3 and *3a* are perspective end and side views, respectively of the completed package.

Referring to the drawings, the package (Figure 3a) is formed from an elongate blank 10 (Figure 1) of paperboard or similar foldable sheet material. The blank comprises, in series, a glue flap 12, a top panel 14, a first side panel 16, a bottom panel 18, a second side wall panel 20 and a tuck flap 22, hinged one to the next along interrupted transverse fold lines 24, 26, 28, 30 and 32 respectively.

A pair of spaced slits 34 and 36, defined by tabs 34*a* and 36*a* respectively, is struck from panel 12 along fold line 24. A similar pair of slits 38 and 40 defined by tabs 38*a* and 40*a*, respectively, is struck from side panel 16 along fold line 20. A further pair of apertures 42 and 44 is struck partially from panel 20 and partially from panel 22 along fold line 32. All the slits above mentioned are sized and disposed to receive top flange portions of containers Qc' to be packaged in order to assist in retention of the containers within the packagae against longitudinal dislodgement.

A pair of apertures 46 and 48 each for receiving a body portion of a container is stuck from the bottom wall 18 and by which apertures the containers to be packaged are introduced into the blank. A hinged flap 50 protrudes into the space defined by aperture 46 and is pivotal about a hinge 52 defined by material located between opposed cut lines 54 and 56. The material strip Qm' adjacent the cut lines and free edge of the bottom panel is relatively narrow and has a disposition to twist out of the plane of the bottom panel when the flap 50 is displaced about its hinged connection. A similar hinged flap 58 protrudes into the space defined by aperture 48 and is pivotal about a hinge 60 defined by material located between opposed cut lines 62 and 66.

The blank 10 described above is adapted to receive a pair of flanged, frusto-conical containers C. The containers to be packaged are introduced into apertures 46 and 48 with their smaller diameter bases leading. Since the hinged flaps 50 and 58 each interfere with the passage of a container through the respective apertures, the flaps are displaced in the direction of insertion of the containers and pivot about their hinged connection. Pivotal movement of the hinged flaps gradually becomes greater as the containers are further introduced into the apertures owing to the progressively increasing diameter of the containers. The pivotal movement of the hinged flaps causes the adjacent material Qm' of the bottom wall panel to twist out of the plane of that panel thus providing a small increase in the size of the apertures. The hinged flaps eventually lie substantially flat against the walls of the containers upon full insertion of the containers into the apertures 46 and 48.

Once the containers are fully inserted, the blank may be wrapped about top portions of the containers to complete the package. To this end, the top wall panel 14 is brought into overlying relationship with respect to the tops of the containers and portions of the container top flanges are thereby inserted into slits 38 and 40. Also side wall panel 20 and tuck flap 22 are hinged upwardly so that slits 42 and 44 receive diametrically opposed

portions of the container top flanges. To complete the package, glue flap 12 is folded downwardly about fold line 24 so that it overlies side wall 16 and is adhered thereto during which process the slits 34 and 36 receive the top flange portions projecting from slits 42 and 44.

The hinging of flaps 50 and 58 which induces a twisting movement to the marginal parts of the bottom panel gives those marginal parts better resistance to tearing. In known packages where hinged flaps are not provided, the marginal parts of the bottom panel are easily torn particularly since a close fit between blank and container is desirable. To overcome this problem it is known to widen either these marginal parts resulting in a longer package or to widen the side panels. In either case the package is enlarged beyond the size actually required for packaging the containers.

CLAIMS

1. A package accommodating a a plurality of containers (c) which package comprises a bottom wall (18) having apertures (46,48) in which containers are received so that lower wall portions of the containers are disposed below the bottom wall side walls (16,20) flanking upper wall portions of the containers and a top wall (14) overlying the tops of the containers characterised in that said bottom wall includes a hinged flap (50,58) projecting into each space defined by a bottom wall aperture adjacent each of the opposite ends of said bottom wall, which flaps are pivotally displaced by the containers so that marginal portions (m) of the bottom wall are twisted out of the plane thereof whereby the flaps engage wall portions of the containers.

2. A package according to claim 1, further characterised in that each hinged flap engages a said lower portion of a container.

3. A package according to claim 1 or claim 2, further characterised in that the hinge for each flap is provided by a portion of said bottom wall disposed between a pair of cut lines extending from opposite ends of the flap towards, but stopping short of, one another.

4. A package according to claim 3, further characterised in that said marginal portions of the bottom wall are provided by portions of the bottom wall between each of said cut lines and the adjacent edge of the bottom wall.

5. A blank (10) for forming a package which blank comprises in series, a top panel (14), a first side wall panel (16), a bottom wall panel (18), and a second side wall panel (20) hinged one to the next forming a generally tubular structure, said bottom panel including a plurality of apertures (46,48) to receive containers to be packaged, characterised in that a hinged flap (50,58) projects into the space defined by each bottom wall aperture adjacent opposite ends of the bottom wall said flaps being hinged at marginal portions of the bottom wall panel adjacent said ends so that pivotal movement of the flaps causes twisting movement of said marginal portions (m).

6. A package substantially as hereinbefore described, with reference to and as shown in Figures 3 and 3a of the accompanying drawings.

7. A blank substantially as hereinbefore described, with reference to and as shown in Figures 1 and 2 of the accompanying drawings.

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